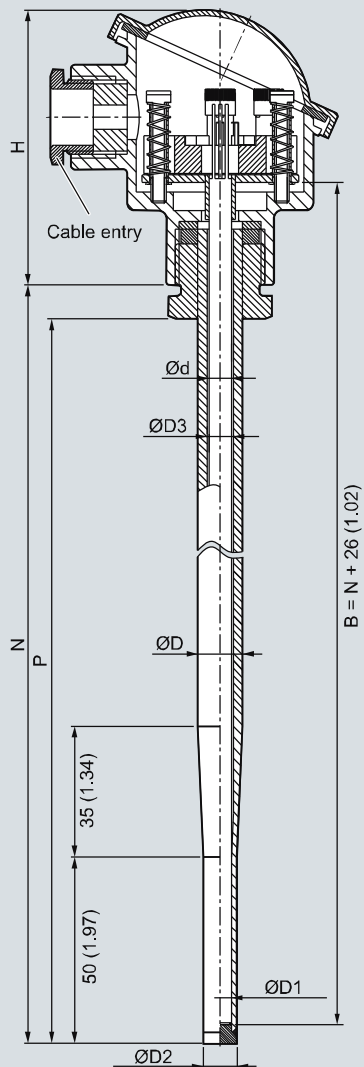


# Temperature Measurement

## Type 3, tubular quick without process connection

### Dimensional drawings



- B Measuring insert length
- Ød Measuring insert outer diameter (6 (0.24))
- ØD Process connection outer diameter
- ØD1 Tip internal diameter
- ØD2 Tip outer diameter
- ØD3 Thermowell diameter
- H Head height
- N Nominal length
- P Space for process connection

SITRANS TS500, temperature sensors for vessel and pipings, tubular version for minimum to medium stress, without process connection, without extension, plug-in or use with moveable compression fitting, dimension in mm (inch)

# Temperature Measurement

## Type 3, tubular quick without process connection

| Selection and Ordering data                                                                                                                                                                  | Order No.Ord. Code |  |  |  |  |  |  |       |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--|--|--|--|--|--|-------|--|--|
| <b>SITRANS TS500</b>                                                                                                                                                                         | <b>7 MC 7 5 1</b>  |  |  |  |  |  |  |       |  |  |
| <b>Tubular version for minimal to medium stress, thermowell per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings</b> |                    |  |  |  |  |  |  |       |  |  |
| <b>Material, in contact with media</b>                                                                                                                                                       |                    |  |  |  |  |  |  |       |  |  |
| • 316Ti (1.4571)                                                                                                                                                                             | 1                  |  |  |  |  |  |  |       |  |  |
| • 316L (1.4404)                                                                                                                                                                              | 2                  |  |  |  |  |  |  |       |  |  |
| • Special version, enter thermowell material in plain text                                                                                                                                   | 8                  |  |  |  |  |  |  |       |  |  |
| <b>Process connection</b>                                                                                                                                                                    |                    |  |  |  |  |  |  |       |  |  |
| • Without process connection (for compression joints) N=U                                                                                                                                    | 0 N                |  |  |  |  |  |  |       |  |  |
| • Special version                                                                                                                                                                            | 9 X                |  |  |  |  |  |  | H 1 Y |  |  |
| <b>Thermowell form</b>                                                                                                                                                                       |                    |  |  |  |  |  |  |       |  |  |
| • 3, 12/9 mm (0.47/0.35 inch)                                                                                                                                                                | K                  |  |  |  |  |  |  |       |  |  |
| • Special version, enter thermowell form in plain text                                                                                                                                       | Z                  |  |  |  |  |  |  | K 1 Y |  |  |
| <b>Insertion length U (=N), Standard</b>                                                                                                                                                     |                    |  |  |  |  |  |  |       |  |  |
| • 160 mm (6.3 inch)                                                                                                                                                                          | 0 4                |  |  |  |  |  |  |       |  |  |
| • 220 mm (8.66 inch)                                                                                                                                                                         | 0 7                |  |  |  |  |  |  |       |  |  |
| • 280 mm (11.02 inch)                                                                                                                                                                        | 1 3                |  |  |  |  |  |  |       |  |  |
| <b>Insertion length U (=N), customer-specific</b>                                                                                                                                            |                    |  |  |  |  |  |  |       |  |  |
| enter customer specific length with Y44, see page 131 order codes                                                                                                                            |                    |  |  |  |  |  |  |       |  |  |
| • 80 ... 100 mm (3.15 ... 3.94 inch)<br>Standard: 100 mm (3.94 inch)                                                                                                                         | 0 1                |  |  |  |  |  |  |       |  |  |
| • 101 ... 120 mm (3.98 ... 4.72 inch)<br>Standard: 120 mm (4.72 inch)                                                                                                                        | 0 2                |  |  |  |  |  |  |       |  |  |
| • 121 ... 140 mm (4.76 ... 5.51 inch)<br>Standard: 140 mm (5.51 inch)                                                                                                                        | 0 3                |  |  |  |  |  |  |       |  |  |
| • 141 ... 160 mm (5.55 ... 6.30 inch)<br>Standard: 160 mm (6.3 inch)                                                                                                                         | 0 4                |  |  |  |  |  |  |       |  |  |
| • 161 ... 180 mm (6.34 ... 7.09 inch)<br>Standard: 180 mm (7.09 inch)                                                                                                                        | 0 5                |  |  |  |  |  |  |       |  |  |
| • 181 ... 200 mm (7.13 ... 7.87 inch)<br>Standard: 200 mm (7.87 inch)                                                                                                                        | 0 6                |  |  |  |  |  |  |       |  |  |
| • 201 ... 220 mm (7.91 ... 8.66 inch)<br>Standard: 220 mm (8.66 inch)                                                                                                                        | 0 7                |  |  |  |  |  |  |       |  |  |
| • 221 ... 240 mm (8.7 ... 9.45 inch)<br>Standard: 225 mm (8.86 inch)                                                                                                                         | 1 1                |  |  |  |  |  |  |       |  |  |
| • 241 ... 260 mm (9.48 ... 10.24 inch)<br>Standard: 250 mm (9.84 inch)                                                                                                                       | 1 2                |  |  |  |  |  |  |       |  |  |
| • 261 ... 280 mm (10.28 ... 11.02 inch)<br>Standard: 280 mm (11.02 inch)                                                                                                                     | 1 3                |  |  |  |  |  |  |       |  |  |
| • 281 ... 300 mm (11.02 ... 11.81 inch)<br>Standard: 285 mm (11.22 inch)                                                                                                                     | 1 4                |  |  |  |  |  |  |       |  |  |
| • 301 ... 320 mm (11.85 ... 12.6 inch)<br>Standard: 315 mm (12.4 inch)                                                                                                                       | 1 5                |  |  |  |  |  |  |       |  |  |
| • 321 ... 340 mm (12.64 ... 13.39 inch)<br>Standard: 340 mm (13.39 inch)                                                                                                                     | 1 6                |  |  |  |  |  |  |       |  |  |
| • 341 ... 360 mm (13.43 ... 14.17 inch)<br>Standard: 360 mm (14.17 inch)                                                                                                                     | 2 0                |  |  |  |  |  |  |       |  |  |

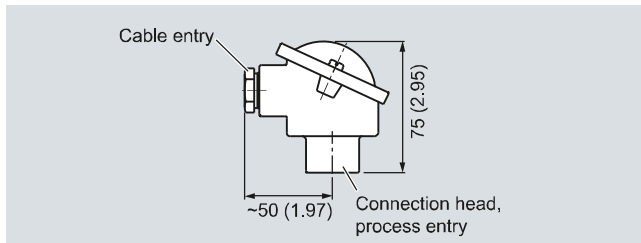
| Selection and Ordering data                                                                                                                                                                  | Order No.Ord. Code |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--|--|--|--|--|--|--|--|--|
| <b>SITRANS TS500</b>                                                                                                                                                                         | <b>7 MC 7 5 1</b>  |  |  |  |  |  |  |  |  |  |
| <b>Tubular version for minimal to medium stress, thermowell per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings</b> |                    |  |  |  |  |  |  |  |  |  |
| • 361 ... 380 (14.21 ... 14.96 inch)<br>Standard: 380 mm (14.96 inch)                                                                                                                        | 2 1                |  |  |  |  |  |  |  |  |  |
| • 381 ... 400 (15 ... 15.75 inch)<br>Standard: 400 mm (15.75 inch)                                                                                                                           | 2 2                |  |  |  |  |  |  |  |  |  |
| • 401 ... 420 (15.79 ... 16.54 inch)<br>Standard: 420 mm (16.54 inch)                                                                                                                        | 2 3                |  |  |  |  |  |  |  |  |  |
| • 421 ... 440 (16.57 ... 17.32 inch)<br>Standard: 440 mm (17.32 inch)                                                                                                                        | 2 4                |  |  |  |  |  |  |  |  |  |
| • 441 ... 460 (17.36 ... 18.11 inch)<br>Standard: 460 mm (18.11 inch)                                                                                                                        | 2 5                |  |  |  |  |  |  |  |  |  |
| • 461 ... 480 (18.15 ... 18.90 inch)<br>Standard: 465 mm (18.30 inch)                                                                                                                        | 2 6                |  |  |  |  |  |  |  |  |  |
| • 481 ... 500 (18.94 ... 19.68 inch)<br>Standard: 500 mm (19.68 inch)                                                                                                                        | 2 7                |  |  |  |  |  |  |  |  |  |
| • 501 ... 550 (19.72 ... 21.65 inch)<br>Standard: 510 mm (20.08 inch)                                                                                                                        | 3 1                |  |  |  |  |  |  |  |  |  |
| • 551 ... 600 (21.69 ... 23.62 inch)<br>Standard: 600 mm (23.62 inch)                                                                                                                        | 3 2                |  |  |  |  |  |  |  |  |  |
| • 601 ... 650 (23.66 ... 25.59 inch)<br>Standard: 650 mm (25.59 inch)                                                                                                                        | 3 3                |  |  |  |  |  |  |  |  |  |
| • 651 ... 700 (25.63 ... 27.56 inch)<br>Standard: 700 mm (27.56 inch)                                                                                                                        | 3 4                |  |  |  |  |  |  |  |  |  |
| • 701 ... 750 (27.6 ... 29.53 inch)<br>Standard: 750 mm (29.53 inch)                                                                                                                         | 3 5                |  |  |  |  |  |  |  |  |  |
| • 751 ... 800 (29.57 ... 31.50 inch)<br>Standard: 800 mm (31.50 inch)                                                                                                                        | 3 6                |  |  |  |  |  |  |  |  |  |
| <b>Extension</b>                                                                                                                                                                             |                    |  |  |  |  |  |  |  |  |  |
| Standard length for Type 2 as per DIN 43722 (without extension N=U)                                                                                                                          | 0                  |  |  |  |  |  |  |  |  |  |

**Additional configurations on page after next page!**

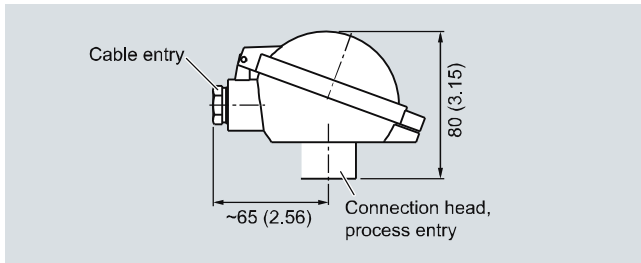
**You find ordering examples on page 33!**

# Temperature Measurement

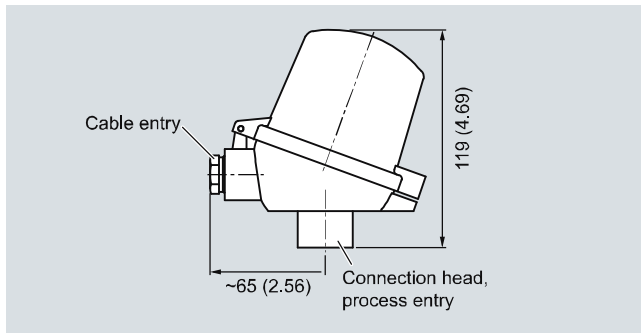
## Type 3, tubular quick without process connection



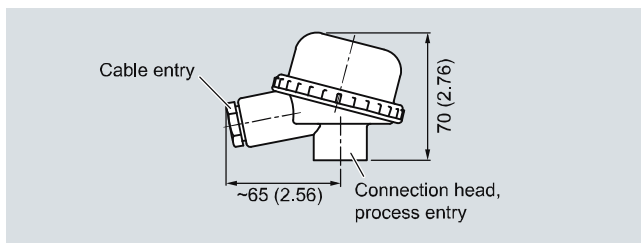
Connection head, aluminum, Type BA0, dimensions in mm (inch)



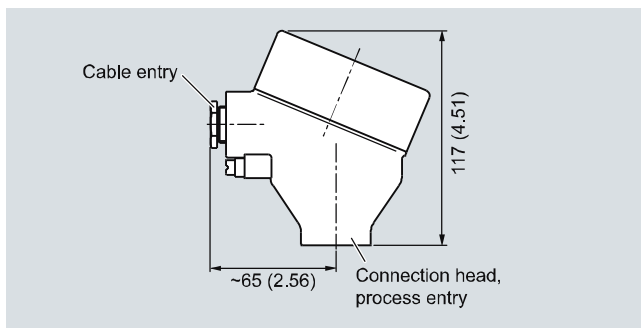
Connection head, aluminum, Type BB0, dimensions in mm (inch)



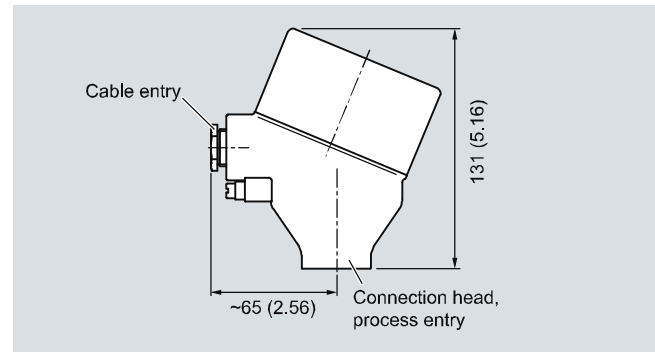
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



Connection head, plastic, Type BM0, dimensions in mm (inch)



Connection head, aluminum, Type AG0, stainless steel, Type AU0, dimensions in mm (inch)



Connection head, aluminum, Type AH0, dimensions in mm (inch)

# Temperature Measurement

## Type 3, tubular quick without process connection

| Selection and Ordering data                                                                                                                                                                     | Order No. | Ord. | Code  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------|-------|
| <b>SITRANS TS500</b>                                                                                                                                                                            | 7         | MC   | 7 5 1 |
| <b>Tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings</b> |           |      |       |
| <b>Head</b>                                                                                                                                                                                     |           |      |       |
| • Aluminum head, BA0, flange cover, Standard                                                                                                                                                    |           | A    |       |
| • Aluminum head, BB0, low hinged cover, screw connection                                                                                                                                        |           | B    |       |
| • Aluminum head, BC0, high hinged cover, screw connection                                                                                                                                       |           | C    |       |
| • Aluminum head, AG0, screw cover, Ex d                                                                                                                                                         |           | G    |       |
| • Aluminum head, AH0, screw cover, Ex d, display (not for Ex i)                                                                                                                                 |           | H    |       |
| • Plastic head, BM0, screw cover                                                                                                                                                                |           | M    |       |
| • Plastic head, BP0, high hinged cover, screw connection                                                                                                                                        |           | P    |       |
| • Stainless steel head, AU0, screw cover, Ex d                                                                                                                                                  |           | U    |       |
| • Stainless steel head, AV0, screw cover, Ex d, display (not for Ex i)                                                                                                                          |           | V    |       |
| • Special version of connection head                                                                                                                                                            |           | Z    | P 1 Y |
| <b>Sensor</b>                                                                                                                                                                                   |           |      |       |
| • Pt100, basis, -50 ... +400 °C (-58 ... +752 °F)                                                                                                                                               |           | A    |       |
| • Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)                                                                                                                                 |           | B    |       |
| • Pt100, expanded range, -196 ... +600 °C (-321 ... +1112 °F)                                                                                                                                   |           | C    |       |
| • Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382 °F)                                                                                                                        |           | J    |       |
| • Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F)                                                                                                                                    |           | K    |       |
| • Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F)                                                                                                                                    |           | N    |       |
| <b>Sensor number/Accuracy</b>                                                                                                                                                                   |           |      |       |
| • Single, basic accuracy (Class 2/Class B)                                                                                                                                                      |           | 1    |       |
| • Single, increased accuracy (Class 1/Class A)                                                                                                                                                  |           | 2    |       |
| • Single, highest accuracy (Class AA)                                                                                                                                                           |           | 3    |       |
| • Double, basic accuracy (Class 2/Class B)                                                                                                                                                      |           | 5    |       |
| • Double, increased accuracy (Class 1/Class A)                                                                                                                                                  |           | 6    |       |
| • Double, highest accuracy (Class AA)                                                                                                                                                           |           | 7    |       |
| • Special version for sensor and accuracy - to be specified                                                                                                                                     |           | Z 0  | Q 1 Y |

| Selection and Ordering data                                                                                                | Order code |
|----------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Further designs</b>                                                                                                     |            |
| Add "-Z" to Order No. and specify Order Code.                                                                              |            |
| <b>Enter thermowell material</b><br>in plain text                                                                          | G1Y        |
| <b>Enter process connection</b><br>in plain text                                                                           | H1Y        |
| <b>Enter thermowell form</b><br>in plain text                                                                              | K1Y        |
| <b>Insertion length customer-specific</b><br>Select range, enter desired length in plain text (No entry = standard length) | Y44        |
| <b>Head</b><br>Enter connection head in plain text                                                                         | P1Y        |
| <b>Sensor number/Accuracy</b><br>Enter connection head in plain text                                                       | Q1Y        |

| Selection and Ordering data                                                                                                                          | Order code |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Options</b><br>Add "-Z" to order number and add options, separate extensions with "+".                                                            |            |
| <b>Built-in head transmitter</b>                                                                                                                     |            |
| • SITRANS TH100, 4 ... 20 mA, Pt100                                                                                                                  | T10        |
| • SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100                                                                                                      | T11        |
| • SITRANS TH100 Ex i (FM), 4 ... 20 mA, Pt100                                                                                                        | T13        |
| • SITRANS TH200, 4 ... 20 mA, Universal                                                                                                              | T20        |
| • SITRANS TH200 Ex (ATEX), 4 ... 20 mA, Universal                                                                                                    | T21        |
| • SITRANS TH200 Ex (FM), 4 ... 20 mA, Universal                                                                                                      | T23        |
| • SITRANS TH300, HART, Universal                                                                                                                     | T30        |
| • SITRANS TH300 Ex (ATEX), HART, Universal                                                                                                           | T31        |
| • SITRANS TH300 Ex (FM), HART, Universal                                                                                                             | T33        |
| • SITRANS TH400 PA, Universal                                                                                                                        | T40        |
| • SITRANS TH400 PA Ex, Universal                                                                                                                     | T41        |
| • SITRANS TH400 FF, Universal                                                                                                                        | T45        |
| • SITRANS TH400 FF Ex, Universal                                                                                                                     | T46        |
| <b>Explosion protection</b>                                                                                                                          |            |
| • Intrinsic safety "ia", "ic"                                                                                                                        | E01        |
| • Flameproof enclosure "d"; Dust protection by enclosures "t" only in combination with connection heads code AG0, AH0, AU0, AV0, without cable gland | E03        |
| • Non sparking "n"                                                                                                                                   | E04        |
| <b>Certificates and approvals</b>                                                                                                                    |            |
| • EN10204-3.1 Inspection certificate for materials coming into contact with media                                                                    | C12        |
| • EN10204-3.1 Inspection certificate for hydrostatic pressure test                                                                                   | C31        |
| • EN10204-3.1 Inspection certificate for helium leak test                                                                                            | C32        |
| • EN10204-3.1 Inspection certificate for surface tear test                                                                                           | C33        |
| • EN10204-3.1 Inspection certificate: visual, measurement and functional inspection                                                                  | C34        |
| • NACE Standard MR-01-75 compliance                                                                                                                  | C50        |
| • ISO 9001 grease-free (cleaned for e.g. oxygen applications)                                                                                        | C51        |
| <b>Designation, calibration</b>                                                                                                                      |            |
| • Stainless steel TAG plate, enter lettering in plain text                                                                                           | Y15        |
| • Plant calibration per 1 point, enter temperature in plain text                                                                                     | Y33        |
| <b>Transmitter options</b>                                                                                                                           |            |
| • Transmitter, enter complete setting in plain text (Y01: +/-NNNN ... +/-NNNN C,F)                                                                   | Y01        |
| • Transmitter, enter HART address (max. 8 characters) in plain text                                                                                  | Y17        |
| • Transmitter, enter measuring point description (max. 16 characters) in plain text                                                                  | Y23        |
| • Transmitter, enter measuring point text (max. 32 characters) in plain text                                                                         | Y24        |
| • Transmitter, enter bus address in plain text                                                                                                       | Y25        |
| • Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA)                                                                                           | U36        |
| • Transmitter with a SIL 2 conformity                                                                                                                | C20        |
| • Transmitter with a SIL 2/3 conformity                                                                                                              | C23        |
| • Transmitter test protocol (5 points)                                                                                                               | C11        |
| <b>Further options</b>                                                                                                                               |            |
| • Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs)                                           | G01        |
| • M12 plug (in combination with 1x Pt100 and/or transmitter, Non-Ex)                                                                                 | G12        |
| • Harting plug Han 7 D (Non Ex)                                                                                                                      | G13        |
| • Connection head with ½" NPT thread without cable gland                                                                                             | G20        |
| • Plastic cable gland                                                                                                                                | G21        |
| • with spring lock for heads BB0 and BC0                                                                                                             | A01        |
| • with outer earth screw for heads AG0, AH0, AU0 and AV0                                                                                             | A02        |
| • with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0                                                                                        | A03        |
| • Compression joint G½", enclosed                                                                                                                    | A31        |
| • Compression joint NPT½", enclosed                                                                                                                  | A32        |
| <b>Option not found?</b><br>Specify special version in plain text                                                                                    | Y99        |

You find ordering examples on page 33!